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Volume 12 JULY, 1938 Number 3

CONTENTS

The Common Cold 3
by Fred W. Morse, Jr., M.D.

Periapical Radiodontia 8
by Robert W. Larson

Editorial 15

The Convention in St. Louis, Mo. 16

The Philosophy of Dental Health Education 18
by K. R. Gibson, D.D.S.

Helen M. Baukin 31

Program Plans for the Fifteenth Annual Convention 34

American Dental Association Plans 36
San Francisco Fair Exhibit

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MARGARET H. JEFFREYS
Editor
JOURNAL AMERICAN HYGIENISTS' ASSOCIATION

The Common Cold

BY FRED W. MORSE, JR., M.D.

AN accute inflammatory reaction of the mucous membrane of the nose and throat, accompanied by a free discharge of mucus, is known as a cold. Usually the reaction is most marked in the nose, but a considerable minority of people complain every year of a dry or sore throat and irritation of the respiratory tract below the nasopharynx. Both of these reactions must be considered as manifestations of the common cold, and in either case should be a warning to the victim to take immediate steps to stop the disease by the one unquestionably satisfactory treatment, rest in bed.

The common cold is rightly named common. It is the most frequent of acute disease and affects more persons, (in the language of the public health worker,—has a greater incidence—)than any other disease but one. This disease which has the highest incidence of all should be well known to the readers of this journal, for it is of course Dental Caries.

Along with the flowing mucous membrane or the sore throat and raspy vocal cords usually comes a feeling of general discomfort, headache, swollen eyeballs and a genuine loss of enthusiasm. Muscular aches as a complication suggest that the diagnosis of a simple cold is not quite accurate. Such aching of the muscles and bones is generally considered to be a symptom of that condition which may be called grippe or possibly influenza, which are unsatisfactory terms at best. The term Common Cold does mean slightly different combinations of symptoms to different persons, but all in all, it is about as satisfactory a name for the condition as anything we have at present. Rhinitis is a fairly good technical term, and Acute Upper Respiratory Infection covers the gamut of conditions, including those which follow in the wake of a cold. Here is a chance for terminologists to do humanity a service by coining a new name for the Common Cold which will be somewhat more specific, and suggestive of the need for prompt and effective care.

Before going on to a discussion of the complications which may follow a cold, it will be best to have a little idea of what goes wrong in the respiratory tract during a cold. The irritation in the nose affects the mucous membrane of the septum and of the turbinate bones on each side of the nose. This normal grayish pink smooth tissue swells and reddens, and more blood is carried to this tissue. But the return of the venous blood to the heart is hampered because the veins traverse the bones in the nose, and the bony canal for the veins cannot change size. Therefore the blood is held back in the mucous membrane as if by a dam. This results in a rather rapid discharge of sero-mucous secretion, with the increase in the volume of blood in the part. The venous return here in the turbinates is made difficult, much in the fashion that the venous return from the pulp of an inflamed tooth is handicapped in traversing the canaliculi at the apex of the tooth. Fortunately the expansion of the tissues surrounding the turbinates does not cause the serious complications that inflammation may

cause in the teeth, because the pulp of the teeth is encased in a thick walled box, with the result that increased pressure does a lot of damage to the soft tissues of the pulp.

This condition of swelling and inadequate circulation in the nose is in part repeated in the tonsils and the tonsillar tissue of the pharynx and the mucous membranes of the larynx and trachea. Very often, therefore, complications follow colds. A thick purulent discharge is the commonest result, apparently because of a superimposed infection by one or another of the streptococcus, staphylococcus or pneumococcus forms of bacteria which are invariably found in the nose and throat. Or perhaps it is middle ear disease, due to a back wash of organisms into the Eustachian tube, hastened by the careless and over-vigorous blowing of the nose. About every tenth person who has a cold develops some degree of sinus infection, perhaps frontal or ethmoidal, perhaps in the maxillary sinuses or antra. All too often a cold is the predisposing factor in pneumonia.

Why do colds occur? At the present time there is a controversy among the keen students of the common cold concerning its etiology.

One group feels that colds are a definite infectious process, that they are contagious and that some sort of infectious material which can be passed from man to man must be the responsible agent. The most likely infectious substance is not in this case one of the germs visible under the microscope, but rather a virus of the filterable type. A filterable virus is a substance the particles of which are so small that they cannot be seen under a microscope. In fact, the materials are about the size of the molecules of liquid matter. This virus substance obtained from the secretions of humans with colds produces colds promptly in some types of monkeys, and has been demonstrated as capable of starting colds in human beings. On the other hand, however, similar material has failed fully as often as it has worked.

Besides experiments with the infectious material carried on in this fashion by the bacteriologist and the immunologist, another type of experiment which points in the same direction has been carried out by public health experts especially interested in epidemiology. The epidemiologist establishes an observation station and laboratory in an isolated community, and then waits patiently for an epidemic to descend upon the population. For the study of common colds it is especially necessary to choose isolated communities with a population small enough so that everyone can be watched. Such places have been selected in Labrador, in the West Indies Islands and at Longyear City, a mining town on Spitzbergen, which is far north of the Land of the Midnight Sun. Throughout the winter, for eight months, no ships call at Longyear City, and the seven hundred people who live there the year around get along very comfortably without any colds. But in June comes the first boat up from Norway, and within five days colds have begun and within three weeks over half of the seven hundred people have had a cold. This experience has been repeated over and over again, and has been very carefully reported by Paul and Freese. They did careful laboratory work upon the victims, and no visible bacteria seemed to be responsible; but certainly the disease appeared to travel from man to man.

Therefore it would seem that we could say that colds were due to infectious material which could be transmitted from one human being to another.

But there are opponents to this rather reasonable idea. They say that colds sometimes develop in persons who have not been exposed to other human beings either with or without colds; and they say, secondly, that many persons who are frequently exposed to colds in others never get a cold. Even when exposed by deliberate experiment to virus material just as many people do not get colds as do. These observers say that colds are due to a chilling of the body, and well planned and carefully controlled experiments have shown that a sudden cooling of the skin, sufficient to lower the body temperature slightly, will result in a cold and is necessary before some persons will catch a cold. There are epidemiologists who argue that sudden climatic changes, a chill rain, an east wind, are much more important than exposure to other human beings in producing an epidemic of common colds, even in some of these isolated communities of the world. Chilling has made experimental subjects, previously infected with the virus, more easily susceptible.

It does not seem unreasonable to try to put all of these ideas as regards the cause of colds together. Your patients, your friends, even you yourself because of infection in your sinuses may carry the infectious virus. You are thus exposed more or less constantly to the chance of catching cold. A change in the weather, or an exposure of yourself to a current of air or damp clothing for long enough to really chill your body sets the stage, and away goes the cold to plague you for at least eight days, with at least some of the symptoms which have been described.

That brings us to the matter of what to do about colds. The first thing we want to talk about,—and always the most important thing in considering disease,—is how to prevent the cold. We cannot avoid other people altogether, and most people would not want to avoid others even if they suffered a great deal from colds. But infectious diseases pass most readily from person to person by means of the hands. Infection travels like this:—from mouth and nose to hands, and then from hand to nose and mouth of the other person;or perhaps the virus pauses a few minutes in this transfer on a door knob or on some bit of equally common property. If we cannot avoid others, we can keep our hands clean and away from the mouth or nose. Frequent careful washing of the hands helps us avoid a lot of disease. For instance, I know a group of dental students who are exposed to many people, but they have very few colds. They wash their hands at least every hour of the day. Clean children seem to have fewer contagious diseases than children who are habitually dirty.

Now that we have done what we can to avoid colds by warding off infection, that is, by care to associate only with healthy people and by care in cleanliness, the next thing will be to try to prevent getting chilled. Wet feet are not in themselves dangerous. Wet feet in a bath tub do not produce colds. Wet feet which keep on walking till they dry again do not cause colds. But wet shoes on feet at rest will cause a lowering of temperature. Inadequate wraps for a period long enough to chill the body are an

ally of the cold. Keep the body warm, therefore. Be cautious. Sitting in a cool place long enough to become uncomfortably chilly is likely to predispose to a cold.

So far we have considered the matter of avoiding contacts and the importance of maintaining resistance by keeping up the body heat. There are other factors which are important from the standpoint of hygiene. Of greatest value in this campaign against colds is adequate sleep. Next comes adequate food. There is not enough evidence to show that any of the vitamins or any of the minerals will protect the body against infectious disease, as they will against the specific dietary deficiency diseases. But we can be sure that taking an adequate amount of all the needed vitamins and minerals and protein will give us better health. Only a few people really eat a complete diet, that is, a diet that is capable of giving optimum health. Of course the majority of people take most of the necessary items, but if they took a little more of somethings, they would have still better health.

Just look at the younger generation now growing up. The ones with the high dietary values, especially in vitamins and minerals, have so much more vigor and vitality It is easily visible in their glow of health As an example in this matter of taking adequate vitamin substances, just ask yourself this question, "Do I take Vitamin D in adequate amount? Do I take as much as 1800 units of Vitamin D per day?" The majority of people do not take the recommended amounts of Vitamin D, and the majority do not get quite enough sun light to make up for this deficiency. However, these same people do not have any definite disease. Ask yourselves if you get enough butter and milk for adequate Vitamin A, or enough vegetables and whole grains for adequate Vitamin B. Most people who get all of these valuable foods find that they are rather more resistant to colds than they had been before selecting this type of diet.

After these practical hygienic measures of sleep, food, exercise, have been taken care of, we can look at some of the specific things used to prevent colds. Bacterial vaccines have been employed for years. But carefully controlled experiments by unbiased scientists show that just as many colds are had by those who are vaccinated as by those who are not. There are many physicians who find that about fifty per cent of the patients to whom they give vaccines feel that they have been benefited. A vaccine given frequently, say once a week for the entire fall and winter season, may seem to prevent colds because it acts as a non-specific protein, thus encouraging a prompt response to infection and warding off the cold. There may be a slight desensitization to the bacteria which act as secondary invading organisms after a cold starts. All in all, vaccination against colds seems of little use for large masses of people, although it does apparently benefit many individuals. Certainly there is no specific agent (such as we have for building up immunity to small pox or to diphtheria or to typhoid fever) developed to build a true immunity against a cold. While talking about immunity, the observation should be made that some investigators of the common cold consider that a cold may give an immunity of about three months. Others believe that many persons are able to reinfect themselves from chronic sinus infection. From all practical standpoints there is no important degree of immunity.

The treatment of colds seems to be everybody's business, and usually least of all the business of the victims. Victims are prone to carry on with their work without regard to the greater loss of time which may occur because of their immediate neglect. Everyone but the victim tells what to do. One can dose the nose, dose the throat, swallow many medicines, drink depressant liquids and indulge in all manner of physiotherapeutic treatments. Some of these things relieve the discomfort, some dull the patient's sensibility to his discomfort, but the colds go on and usually last from eight to nine days. Experiments have shown that sugar pills given to a large group of people who did not know just what they were getting were felt by these same persons to have been beneficial in at least one third of the cases. The usual drugs obtained over the counter of the drugstore are about as effective, but not much more so. A derivative of opium, which requires a prescription for its purchase, seems to be effective more frequently, especially if taken in the first twenty-four hours after the onset of the cold. Nose drops or inhalations give the victim some comfort, but they do not shorten the duration of the disease. The real treatment which saves time, protects against complications and should make life pleasanter for the victim, is that of going to bed and staying there a couple of days at the very least. When applied faithfully, the time lost because of colds is reduced to a minimum, the danger to others is greatly lessened, and the chances for complications are almost obliterated.

Next time that you feel that you are going to have a cold, go to bed. This is likewise the best way of protecting your patients. Do not go to the office to do poor work and hand your cold on to others. There is no really good excuse for doing work that is not of an emergency nature on a patient when you, the operator, have a cold.

There is no definite evidence that wearing a mask will prevent you from giving a cold to your patients, or prevent you from catching a cold from them. Logically, if you are going to wear a mask, you should wear it all the time that you are working, because even a patient without a cold may carry the infectious material. Instead of relying on masks, stay out of the office and refrain from working on anyone.

In summary then, a cold is an acute upper respiratory infection, with swelling of the tissues and an oozing of mucous from the mucous membranes. It is probably caused by a filterable virus, which passes easily from person to person, but is more likely to start a new infection if that person has been chilled. Colds often have complications caused usually by accompanying bacteria. We have no sure method of prevention, but adequate nutrition and adequate sleep help very much. Treatment makes the victim more comfortable, but the best cure is rest in bed. Rest in bed also prevents for a time the spread of the disease to other persons. It is better to starve a cold and feed a fever, rather than to follow the instructions of the former version of this saying. Do not give oily nose drops to infants and small children. Do not fail to have the ears looked at by the specialist if any soreness develops during a cold. A headache beginning two or three days after the start of a cold suggests sinus trouble, and in this case professional care is worth the cost. Sleep well, eat well, keep warm, but not over warm, and go to bed if you catch a cold.

Periapical Radiodontia

BY ROBERT W. LARSON, *Instructor in Radiology,*
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Read before the Study Club Class on Radiology sponsored by the Wisconsin Dental Hygienists' Association.

THE proclamation that "a 'light' had been discovered which for the purpose of photography would penetrate wood, cloth, and most other substances", ignited a feverish interest in various electrical laboratories throughout the world. To Professor Wilhelm Conrad Roentgen goes the credit and distinction of discovering this new light which today is called Roentgen or x-rays.

The science of roentgenology first entered the field of dentistry in the fall of 1896, one year after its discovery. Fostering this new science were Drs. Van Woert, Rhein, Morton and Ottolengui of New York City who formed a study group for making and interpreting dental radiographs. There is some doubt as to who made the first dental radiograph, but it is reasonably safe to bestow this honor evenly on Dr. C. Edmund Kells and Dr Van Woert.

Dr. Kells was radiodontia's first martyr. His professional life was devoted to x-ray and his many clinics and papers will be forever remembered in radiological circles.

The development of our present use of x-ray in modern dentistry is probably due to the research and investigation of many dentists, of whom Dr. Howard R. Raper is outstanding. To him is credited the first text book on the subject of radiography; it was he who coined the word "radiodontia"; the originator of the type of radiography known as inter-proximal or bitewing radiodontia; and he introduced the first full time radiography course in a dental college.

It is an accepted fact that radiodontia is invaluable to the modern dental profession. The uses of radiographs are numerous and beneficial in all specialized branches of dentistry. Operative dentistry is aided and abetted by its uses. For instance, caries and its extent are readily visualized, when surveyed through the medium of a radiograph. The deftness and ability of an oral surgeon is greatly enhanced when he has good radiographs to help him in cases of impactions, cysts, tumors, etc. Therapeutic dentistry benefits materially, as an apical infection, in most cases, can easily be recognized through its use. Uses too numerous to list can be readily realized, but all its uses and adaptability are of no avail unless the operator has a thorough knowledge of what constitutes a good radiograph, and has mastered a good workable technique for securing a good result under the various and varying conditions encountered daily.

The requisites of a good radiograph are many. One must learn to recognize readily whether or not the film he may be viewing is qualified to be called a "good radiograph".

Four technical factors go into the making of a good film. 1. Detail, which is the sharpness and contour of the structural lines. 2. Density, the generalized blackness of the film. 3. Contrast, the degree of blacks and whites. 4. Distortion, (a) haziness or partial obliteration, due to unnecessary and excessive bending of film, (b) improper alignment of film to part, (c) improper alignment of radiation emanation to film and part. (Fig. 1).

Fig. 1.—Illustrates correct and incorrect radiation emanation. Photograph on left shows central radiation passing through interproximal spaces at a mesial angulation. Photograph on right depicts central radiation travelling at true right angles to the buccal surface of teeth and directly through the interproximal spaces.

The detail, density and contrast are controlled by the following: Kilovoltage, which controls the penetration power of the x-rays, and can be likened to the quality. The Milliampere seconds, which is the product of the Milliamperes multiplied by the exposure time in seconds, controls the amount of radiation expended and can be likened to the quantity.

In radiodontia, with our modern shockproof equipment, the task of selecting the proper Kilovoltage and Milliamperes is comparatively simple, as the educational departments of the various x-ray manufacturers have formulated standard exposure techniques suited to their type of equipment.

Assuming that the exposure factors are pre-determined competently, the next factor of great importance is positioning—of the film, patient and x-ray tube.

The cardnial rules pertaining to patient, film and tube positioning are as follows: The patient should be seated comfortably with the occlusal plane of the teeth parallel to the floor and the median line perpendicular. The position should be maintained throughout the complete operation. The placement of the film is of vital importance. When radiographing the upper jaw, the inferior border of the long axis of the film should extend approximately 1/8 inch below the occlusal or incisal edges, and should at all times remain parallel to those surfaces. On the lower jaw the superior border of the long axis of the film should be placed so that approximately 1/8 inch of the film shows above the occlusal and incisal surfaces of the teeth and remain parallel to those surfaces.

The theoretical aspect, of course, is important, but actual mastering of the technique of intra-oral radiography comes with practical experience. Radiodontia is divided into two sections, intra-oral, and extra-oral. Periapical, occlusal, and inter-proximal or bitewing radiography are in the intra-oral classification. Lateral jaws, sinuses, temporo-mandibular joints, etc., can be classified as extra-oral radiography pertaining to the profession of dentistry.

The specific radiograms which have the most prevalent use in dentistry are those showing periapical areas. They are probably the most frequent type of radiographic examination, and also the more difficult because of its inclusiveness.

A standard technique of insertion of films, angulation of radiation, position of cone, etc., makes the procedure of intraoral periapical radiography comparatively simple. It is usually advisable to start with the maxillary molar area, continuing with the bicuspid, cuspid and incisor regions. After completion of all maxillary areas, the radiographing of the teeth in the mandible follows, carrying out the same procedure used in the maxilla.

Assuming the patient is in correct position, with the occlusal plane parallel to the floor and the median line perpendicular, the next procedure is to insert the film in the mouth, with the long axis horizontal, as far posterior as possible, with 1/8 inch of the inferior border of the film below and parallel to the occlusal surface of the molars. The anterior border of the film should then be even with the distal surface of the second bicuspid (Fig. 2). The cone is placed at an angle of 32° below the horizontal, with the x-radiation directed at right angles to the buccal surfaces of the molars (Fig. 2). The central radiation should enter at a point slightly anterior and inferior to the outer canthus of the eye.

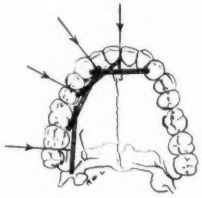

Fig. 2.—Diagrammatical explanation of film packet positions for periapical maxillary radiography, illustrating relative film placement and radiation emanation.

When introducing the film for the bicuspid area, the anterior border of the film is placed mesially as far as possible without excessive bending, to approximately the mesial border of the cuspid, depending upon the size and shape of the maxilla (Fig. 2). The inferior border of the horizontal plane of the film should again be approximately 1/8 inch below the occlusal surfaces, and remain parallel to those surfaces. Placement of the cone at an angle of 40° below the horizontal, is with its posterior border resting against the anterior border of the malar process. The central radiation emanates at right angles to the buccal surfaces of the teeth (Fig. 2), and slightly above the gingivae.

For the cuspid and lateral incisor area, the film is positioned in a vertical angle with minimum of bending so that its mesial border extends to the mesial borders of the central incisors and its inferior border 1/8 inch below and parallel to the incisal edges of the teeth (Fig. 2). The tip of the cone,

declined at a 50° angle is placed slightly inferior to the ala of the nose. X-radiation must emanate at right angles to the labial surfaces of the cuspid and lateral incisor (Fig. 2).

In the central incisor area, the film is inserted in a vertical position, with the two centrals in the center of the film. 1/8 inch of the inferior border of the film extends below and parallel to their incisal edges (Fig. 2). Decline the tube to an angle of 45° to 50°, place the tip of the cone on the tip of the nose, directing the rays at true right angles to the labial surfaces of the incisors (Fig. 2). In the case of a high vault or a "V" arch, the film is placed on the incisal surfaces of the lower incisors and the patient instructed to bite, which brings the film in a horizontal position. Angulation is approximately 65° below the horizontal and the tip of the cone placed slightly above the tip of the nose.

In the radiography of the mandibular teeth, the position of the head remains the same as for the maxilla. Starting with the mandibular molar, the film is introduced in a horizontal position as far posterior as possible so that the mesial border of the film is even with the distal surface of the second bicuspid (Fig. 3). Care should be exercised in positioning the film to be certain the third molar will be included even though it may be unerupted or impacted. 1/8 inch of the film should protrude above and parallel to the occlusal surfaces of the molar, and the tip of the cone placed at the area of the second molar at an inclination of 7° to 10°, slightly above the inferior border of the mandible, with central radiation emanating at right angles to their buccal surfaces (Fig. 3).

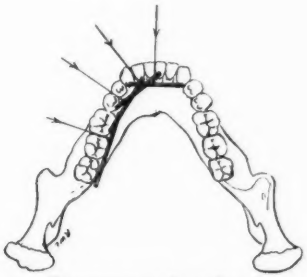

Fig. 3.—Diagrammatical explanation of film packet positions for periapical mandibular radiography illustrating relative film placement and radiation emanation.

In placing the film for the bicuspid area care should be exercised to maintain the minimum of bending. The film is inserted as far anterior as is possible so that its mesial border may compare to that of the mesial border of the cuspid (Fig. 3). The tip of the cone, inclined at an angle of 18° to 20°, should be placed between the two bicuspids, slightly above the inferior border of the mandible, making certain that the central radiation emanates at right angles to the buccal surfaces of the bicuspids (Fig. 3).

Positioning of the film for the mandibular cuspid and lateral incisor should be accomplished with care as these teeth are easily elongated and distorted. The film is placed in a vertical position with its inferior border inserted under the base of the tongue. This excludes any possibility of bending the long axis of the film which would be certain to present a distorted and elongated view of the cuspid and lateral incisor (Fig. 3). Position of the film is such that the cuspid and lateral are as centrally situated as is possible. X-radiation must emanate at an angle of 25° to 30° above the horizontal and at direct right angles to the labial surfaces of the cuspid and lateral incisors (Fig. 3), with the tip of the cone placed slightly above the inferior border of the mandible and between the cuspid and lateral.

Care again must be exercised with the insertion of the film for the central incisor area. The film is introduced in a vertical aspect with its inferior border resting against the base of the tongue and its superior border protruding ⅛ inch above the incisal edges of the central incisors (Fig. 3). Placement of the cone should be with its inferior border resting upon the superior border of the mental symphysis at an inclination of 25° to 28°, and the central radiation must emanate at right angles to the labial aspect of the central incisors (Fig. 3).

Actual exposure factors are governed chiefly by the size and age of the patient and the types of film used. In the cases of children ranging from 6 to 10 years of age, the exposure time is about one half the time necessary for an adult. Children ranging from the ages of 10 to 15 years require about ¾ of the normal adult exposure. Edentulous areas require approximately ¾ the normal exposure time. Size and shape of the maxilla, mandible and teeth are also an influencing element of exposure factors. Films vary in speed of emulsions. Some have emulsion on but one side of the base and are termed "regular". Other types of films have emulsion on both sides of the base and are known as radiatized, speed, super speed and lightning speed. The amount of silver salts deposited in the emulsion governs the actual speed of the film to register the various anatomical shadows on its surfaces.

A standard technique of development must be maintained throughout the actual processing of the radiographs. Time-temperature development advocated by various film manufacturers should be strictly adhered to because loss of detail, contrast and density can be sustained through improper development. Films should be immersed in the developing solution for five minutes with the temperature of the developer maintained at 65° Farenheit. The developer should never be allowed to become either too cold or too warm, as either may cause deficient processing.

After removal of the films from the developing solution, they should be washed for a few seconds in running water, which is approximately the same temperature as the developing solution, and then transferred to the fixing solution where they should remain for at least eight minutes. The films should then be placed in clear running water of the same temperature as the solutions, and be allowed to remain there from 15 to 20 minutes depending on the flow of water. After removal from the water they should be hung up to dry, and a clean draft of air allowed to blow on them.

Until the last decade very little was known about the detrimental biological effects of x-rays. Men of the scientific world were quick to seize upon the possibility inherent in the new radiations discovered by Roentgen and the Curies; but the dangerous biological effects the rays produce were soon known to them. There has been no less than ten deaths attributed directly to over-exposure of roentgen rays in America alone. Fortunately, we today are able to profit by the early pioneers' experiences. Roentgen rays are claimed by some eminent radiologoist to be either beneficial or harmful to living tissue. There has been much dissension about this, how-
rays are claimed by some eminent radiologist to be either beneficial or x-rays except in the treatment of certain types of cases. In the treating of malignant growths a benefit is derived because the growth of the infection is usually retarded more so than the tissue surrounding the infection.

There are three types of x-ray dermatitis—first, second and third degree burns. The first degree burns are usually surface, and appear from ten days to two weeks after the patient has been subjected to x-radiation. Second degree burns are more serious and are not confined to the surface. The time of appearance is approximately the same as in the case of first degree burns. Third degree burns are more serious, and usually the pain is excruciating, and not much can be done to relieve the patients.

Usually, when there is an erythema dose produced by excess exposure to Roentgen rays on tissue where hair and fingernails are present, there is a local falling out of the hair and the loss of the finger nails exposed to the radiation. The loss of hair may be temporary in the case of light burns but may also be permanent if the dose is sufficient to destroy the hair follicle.

X-rays also have a selective and marked effect upon the blood, as they reduce the number of lymphocyte cells or white blood corpuscles and producing in extreme cases a plastic anemia, which results in a general run-down condition. This is the reason why people who are working in the radiographic field must keep an accurate and complete check on their blood count.

The effect of Roentgen rays upon all tissue is generally destructive. The rays have the faculty of lowering the vitality of all kinds of living matter and their power to produce favorable therapeutic effect lies materially in whatever selective action the rays produce in different kinds of tissue. The general selective action on the different tissues is slight. However, these rays seem to be effective particularly in destroying lymphatic and embryonic tissue and they may, by prolonged exposure, produce sterility either temporarily or permanently. Because of this, x-rays are used in some states to sterilize defective persons legally so that their power of reproduction is removed. Several methods have been devised to shield the operator from these rays. Among them are lead glass shields, lead rubber aprons, lead rubber gloves (in cases of fluorscopy), and lead lined booths.

A dosage table has been compiled by roentgenologists and is standard throughout the country. A patient may be subjected to 1200 milliampere seconds, using a filter of one millimeter of al., and a distance of 15 inches

from the skin of the patient to the target or focal spot of the tube. This amount of radiation may be given again in any one area after the patient has abstained from all roentgen rays for a period of two weeks. It must be remembered that x-rays have an accumulative effect.

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MEMBERSHIP

"What have you done to increase the membership? The success of the American Dental Hygienists' Association depends upon the strength and support of each state society. Have you contacted the dental hygienists who have taken their State Board Examinations? Have you contacted all members who have failed to join this year? Let us all cooperate and help to increase the membership this year. A certificate of Membership will be issued to groups of dental hygienists who can meet the following requirements:

1. The group shall be definitely organized. That is, it shall be the entire staff of dental hygienists connected with a Board of Education, Board of Health, hospital, private or public organization, industrial organization or some similar organization. The group may be a component society of the American Dental Hygienists' Association, a county or district society that is a component society of a component state society of the American Dental Hygienists' Association provided said society has enrolled as a member in good standing each and every practicing, registered dental hygienist working within the district of the society.
2. The group shall number not less than five dental hygienists.
3. Each dental hygienist must be an active member in good standing.

EVELYN MAAS, *Chairman*
Membership Committee

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Secretary: DAISY BELL. 974 Amherst St., Buffalo, N. Y.
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Editorial

KEEPING AHEAD

SO much criticism has been offered of late, regarding the dental hygienist and her inadequate training, that I am beginning to question whether our critics are ill-advised, or whether they are judging the entire profession by a few. It is true that our course is short compared with other professions but sight is entirely lost of the fact that many dental hygienists have continued their education in night and summer schools.

Personally, I would prefer a longer course that would eliminate the necessity for so much study after a hard day's or year's work, but until our training schools become standardized the only alternative must be acceptable and those availing themselves of the opportunity for further study, commended for their efforts.

But even after the course has been lengthened to meet the demands of all, study must continue if we are to keep abreast with the newer trends professionally and in education. Changes are taking place so rapidly in these fields that that which is considered authoritative today, may be regarded with disfavor tomorrow. We must ever be on the alert and in tune with the thoughts of the others. All cannot believe as we do. There are too many organizations—all with their own pet theories.

Today, I am convinced that a theory will be accepted in the measure of the strength of the organization that is behind it. For instance—while in training, we were taught and dental authorities still agree that the habit of thumb and finger sucking among babies should be discouraged because of facial deformities that invariably result should the habit be encouraged. Yet, only recently I was taken to task for making that same statement before a group of "expectant mothers". It seems that mental hygienists

now agree that it is better for such a condition to develop than that a child's disposition be "ruined".

Make it a rule, as a part of your work to keep abreast with the dental authorities, then accept and quote their decisions. As a small part of that group who are making such rapid strides in their profession, we cannot go wrong. It is true that this will require much of your time but will prove most beneficial to your employer, the work you are doing and yourself.

If associated with a public school system, you must keep abreast with newer trends in education. Criticism from school authorities must of necessity follow unless the dental hygienist in the classroom is well informed.

To be a successful dental hygienist as well as to be successful in any other field, one must also be a student. Some have said they found it difficult to resume study after a period of years away from their books. Such a period should never be allowed to lapse as reading and study must continue routinely as a part of the day's work. Only then can our profession progress effectively as those responsible for its being intended it should. Ours is an important service, receiving greater recognition each passing day but our profession only as stable as we, an organized group, with unity of purpose can make it.

THE CONVENTION IN ST. LOUIS, MISSOURI

THE next annual meeting, to be held in St. Louis, October 24, seems a long time away but it is not too early to plan to go. Though you may find it entirely impossible when the time comes, and your disappointment great because of your inability to attend, the fact that you have talked about it may be the means of stimulating within someone else the desire and they may be able to get there. Perhaps it will be their first meeting and by kindling the spark of enthusiasm, you will have done something very worthwhile.

From all reports, this meeting will resemble other meetings in the past, in that every effort is being made to meet the demands

of those attending. Splendid lectures and clinics for those who seek enlightenment through education and social activities for those who prefer to mingle with people, making new acquaintances and renewing old friendships.

It is most difficult to please everyone who attends our annual meetings yet even this may be accomplished if all members who come regularly will find time and the opportunity to befriend the newcomer; see to it that she meets other members and is not left too much to herself. All of you, no doubt, remember your first convention; how you arrived in a strange city, went to a strange hotel and there found yourself surrounded by strange faces. Everyone seemed to know someone else but you were all alone until some kindly soul singled you out and from then on you were one of the group. Since many of our members travel alone to Convention, I believe it most important that some effort should be made, immediately upon their arrival, to see that they are taken care of.

I have heard dentists say that they did not attend conventions to alone hear papers that they could well read at home in their JOURNALS; it was the contact with other dentists they sought. Men whose professional problems were akin to their own: men with whom they might interchange ideas.

The same is true of our own group. Consider the dental hygienist who works in the rural area—whose contacts with other dental hygienists during the year are few because of her remote location. She may increase her background of education by listening to a paper on "Office Management", Radiography", or even "Health Education in the Public Schools", but she will not receive enough of that which applies to her own situation. She is the one that we should consider; that individual who needs contact with someone as remotely located as she is, if she is to carry home with her—renewed enthusiasm for her job—new ideas that she may incorporate into her own program—and the desire to go to another meeting. It is the responsibility of old members to see that this is done.

If everyone who attended our meetings returned home with the feeling that the time and expense was small compared to what she had gained, she would be present at the next meeting. That is why some come time and again and what may be done for one may be done for all.

The Philosophy of Dental Health Education

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WE have deliberately chosen this subject for discussion because it has always appeared to the speaker that the most valuable contribution within the power of the dental hygienist lay in the field of education. Unlike the dentist, whose principal area of activity, it is regretfully stated, is still the repair of remedial defects and the construction of artificial tooth substitutes, the dental hygienist is principally concerned with the prevention of injury to the dental tissues and the education of the public. Hers is not a repair job; hers is a job of prevention, of teaching, and since such effort is most effective when instituted early in the life of the individual, we wlll limit our discussion to its application to children. Adult dental health education is a different subject and would of course require different treatment.

The dental hygienist is an effective agency in the promotion of health, whether her job be in private practice or in public health work, provided she meets certain requirements and fulfills certain obligations. One of these requirements, and an important one, is that she have knowledge of present trends in health education in order that she may intelligently coordinate her efforts with those of progressive school and health education authorities. Our remarks, then, are directed to all dental hygienists irrespective of her individual job status.

DEFINITION OF TERMS USED

Many of the misunderstandings that accrue to discussions of this kind arise from the fact that we attempt such dissertations without defining that about which we are going to talk. The subject of this treatise is "The Philosophy of Dental Health Education." What are the meanings of the words used?

Webster defines "philosophy" as the

"1. Knowledge of phenomena as explained by, and resolved into, causes and reasons, powers and laws," or

"2. A systematic body of general conceptions or principles, ordinarily with implications of their practical application: as, a philosophy of life." (1)

We could change the title of our paper then to "The Principles or Conceptions of Dental Health Education." But what is "education" and what are its objectives? What is "health"? What is "health education"?

"Education," says Laton, "may be defined as giving opportunity for developing all our powers to the fullest within the limits of social welfare." (2) This means that the general objectives of education are "to help children do better the things which they are going to do anyway, to enrich life by showing the pupils additional interests and activities, and to make these activities to some extent possible." (3)

A specific set of objectives for general education has been suggested by a Committee of the National Educational Association in which it will be seen that health has a most important part. These objectives are stated as:

"1. Health.
2. Command of fundamental processes.
3. Worthy home membership.
4. Vocation.
5. Citizenship.
6. Worthy use of leisure.
7. Ethical character." (4)

The State of Michigan, through its Department of Public Instruction, has likewise set up objectives or goals for general education in which health has received due consideration. The limitations of time prevent an enumeration of all these objectives, so we shall content ourselves with the quotation of but part of one.

> "Goal Six (of Public Education): To insure an abundant social and individual life in accordance with each individual's capacity and ambition. This goal involves provision for proper and adequate training in problems of health, in desirable home membership, and in the worthy and constructive use of leisure time." (5)

So far we have defined "philosophy" and "education" and have stated some of the objectives of the latter. But what is "health"? Many authorities have written on the subject of health, but few have defined it.

Sedgwick says, "Health is the normal and disease the abnormal condition of the living mechanism," but this does not help us much. (6)

Winslow and Lauder speak of health as "a condition of abounding physical and mental and emotional vigor which makes possible the leading of an effective and satisfying and socially useful life. It demands sound heredity, a favorable environment (physical and emotional), a knowledge of the type of conduct conducive to maximum health, and an emotional urge to attain the ends in view." (7)

Another and very helpful definition of health is that given by the Committee on Terminology of the Health Education Section of the American Physical Education Association, Journal of Health and Physical Education, December 1934. Here "health in the human organism" is defined as "that condition that permits optimal functioning of the individual, enabling him to live most and to serve best in personal and social relationships." (8)

Using the same authority as our guide for definitions, health education is defined as the "sum of all experiences which favorably influence habits, attitudes, and knowledge relating to individual, community, and racial health." (9) Another way of saying the same thing is that "health education is the sum of all experiences in daily living which best develop the individual in home, school, and community." "Health Education" then is a broad term covering all phases of education pertaining to health.

School health education "is that part of health education that takes place in school or through efforts organized and conducted by school personnel." (10)

THE CHRONOLOGICAL DEVELOPMENT OF SCHOOL HEALTH EDUCATION

Turner says, "The modern school health program recognizes significant contributions to health from many sources, including the medical, nursing, and dental services, physical education, health instruction, specialized training in the field of nutrition, and the public health control of school sanitation and communicable diseases." (11) A few dates that mark significant beginnings or progress in these fields may be of interest.

In 1833	The French Government made school authorities responsible for the sanitary condition of school buildings and the health of children.
From 1868 to 1873	Sweden, Germany, Russia, and Austria employed school physicians.
In 1874	Brussels instituted the first medical inspection system. Also, school dentists and oculists began their work here.
In 1891	London established the first school of nursing.
In 1894	Boston established the first regular system of school medical inspections in the United States.
In 1902	Twenty-five school nurses were appointed in New York City.
In 1903	Reading, Pennsylvania, appointed the first school dentist.
In 1910	Medical inspections were required by law in 337 cities of the United States.
In 1914	Dr. Alfred Fones, Bridgeport, inaugurated the oral hygiene movement through the introduction of ten dental hygienists in Bridgeport schools.
In 1924	Thirty-five states were reported as having either mandatory or permissive laws regarding school medical inspections.

Most states now consider health as one of the major objectives in their educational programs. It is no longer a question, it is an accepted fact.

CHARACTERISTICS OF THE OLDER PHILOSOPHY OF HEALTH EDUCATION

Before going on into the development of the newer philosophy of health education, it may be advantageous to point out the characteristics of the old.

It must be remembered that in the very early days of this robust country, when man's livelihood was wrested from the soil or sustained through his prowess with the rifle, education of children for the most part took place in the home. Parents were of necessity compelled to teach their own children, and from this necessity developed the feeling of responsibility for parent teaching. It is not surprising then to find that in the establishment of the public school system, there was no unanimity of opinion. Indeed, even at this time there are a few persons and some sections of

the country who hold that education is the parent's responsibility. Be that as it may, our early American Democracy instituted compulsory education to insure a literate electorate which it felt was a safeguard for the existence of popular government.

THE OLDER PHILOSOPHY OF HEALTH EDUCATION

Early education was centered around factual education taught in the public schools. In our early Colonial life, Massachusetts took the lead in the establishment of schools because schools are town affairs and Massachusetts was developed on a town system. In 1647, the General Court passed "a law requiring every township of fifty families to support a school in which children should be taught reading and writing, and every township of one hundred families to support a grammar school that could prepare for college." (12)

The subjects taught in the primary schools were reading, writing, arithmetic, and religion. Certain more elementary private schools, called Dame Schools, taught the alphabet, the catechism, and sometimes a little reading and writing. The textbooks were the horn-book and the New England Primer.

"The horn-book was a wooden paddle on which was pasted a sheet of paper with the alphabet, the Lord's Prayer, verses from the Bible, and religious poetry printed on it. All was covered by a sheet of transparent horn, whence the name. The handle made it convenient for the teacher to use in inducing scholarship at one end of the pupil when all effort failed at the other."

"The New England Primer was a compendium of all that would be needed for the schooling of children. It was used in all the colonies and was, Moses Cort Tyler says, "The most widely used book in America." For those pupils who went beyond the New England Primer, the Bible was used as a reader. It had quality as well as curriculum. A familiarity or even a glimpse of the history and literature of the Hebrew people and somewhat of the earlier Christians was no mean introduction to life, especially as the material available in the new country was not extensive." (13)

From what has been said, it is evident that the whole process of education was until late years characterized by a "pouring in and extracting process," with no consideration of the personality of the child. This was no less true of Health Education.

At the beginning of the school year, the teacher was presented with a definite curriculum of subjects to be taught her particular grade. So much time was allotted for study and recitation period. Such subjects as arithmetic, reading, writing, language, geography, history, and later music, civics, citizenship, and hygiene were added to make up the familiar curriculum of primary study. Health Education—or hygiene as it was more familiarly known—was a separate subject treated as was any other subject for which a specific textbook was used and for which so many pages and chapters, study and recitations periods, minutes and hours per week were

allocated. Irrespective of the student's needs, environment, interests, or abilities, the attempt of education was to pour all children through the same mould. Education was in no way related to individual, school, or community living.

At this stage of education, dental health education appeared as a small part of the factual information found in textbooks. It was taught without reference to functioning. The result was that it did not function, it did not stimulate dental corrections, it did not improve habits or attitudes.

Because of this failure to get results, those interested in health education began to develop systems of artificial motivation, such as the use of stars, buttons, ribbons, honor rolls, and banners. It was found that these forms of motivation, especially if connected with competition, stimulated cheating, rivalry, and working only for recognition rather than for dental correction for its own sake. At best, the favorable result—i.e., the securing of corrections, was but temporary.

The use of these devices was an artificial stimulus which in reality diverted the child's attention from the dental interests themselves. A very apt question is, "What is left when this artificial stimulus is withdrawn?" The very appropriate answer is, of course, that very often nothing is left except the development of certain undesirable feeling values among those who could not get the awards and an over-superiority of those who could. These by-products have proved harmful.

I have a story in mind which well illustrates the fleeting value of the use of awards. It concerns the young son of a friend who regularly attended Sunday School from the time he was six years old until he was twelve. The reason was not an undue interest in the lessons as propounded by the Sunday School teacher, but because attendance was regularly checked, and for each year's faithful and uninterrupted attendance a new badge was given. The first year it started out as a ribbon, the next year a bronze badge was given, and so on until the highest award, a gold badge, was awarded, showing that six years of regular Sunday School attendance had been observed. This completed all available awards.

From the time the gold badge award was made, this young man has not been inside a Sunday School or church. Fleeting indeed is the interest and education dependent upon rewards.

This is likely to be the fate of the child's interest in dental care when the artificial stimulus of awards in competition no longer exists.

THE NEWER PHILOSOPHY OF HEALTH EDUCATION

A newer philosophy of health education has developed as the trend in general education has advanced, but first let us review these advances in general education.

National, state, and local educational conferences are focusing on the trend toward progressive education, education which seeks to provide experiences for the **development of children.** Education has come to mean a

process by which the child's capacities and abilities which make up his total personality are developed. Education is now trying to develop children to a point that they are able to know and solve their own particular problems of living.

In Michigan, the Department of Public Instruction is taking an active part in the development of progressive education through citizen's conferences in education, through curriculum building conferences for school people, and through conferences with local school groups to develop progressive education in the "community school." Briefly stated, this signifies:

1. That education is the fostering and development of personality growth;
2. That experiences of thought and activity type are the means by which this personality growth takes place;
3. That experiences of children relating to living in the community and home form the content of the school curriculum.

"We must come to think of the community as the school and to think of the school building as merely one of the community centers in which the community has provided certain facilities and equipment which are useful to the educative process and which are not otherwise available in the community." (14)

These points indicate that, first, the curriculum must be the outcome of study, investigation, and evaluation of the community and people living in it; and second, experiences must be developed through which children may learn *how* to live. These experiences of necessity include acquring the tools of learning and background for evaluating. This type of education includes much activity work and carries the children into the community many, many times.

Of curriculum development, Eugene B. Elliott, State Superintendent of Public Instruction, recently said, "There is nothing mysterious about the curriculum development. It reduces itself to re-shaping the program of the school to fit the needs of those who go to school. A teacher looks to his community and discovers the educational needs of the people who dwell in it; he then looks to his school and makes judgments about its merits and imperfections, and alters his practice according to the evidence. This is curriculum development, neither more nor less." (15)

From this it is readily seen that general education has developed a new "point of view." "Education today is concerned with the growth and development of the total individual, the physical, mental, emotional, and social aspects. Educaton is not striving to bring all children to the same level, but is attempting to find out what each child can do comfortably and well with his native ability and his environment. The best development of the individual in relation to society is the aim of education. Experiences that will aid the child in realizing this aim are the purpose and method of education." (16)

No less complete has been the change affecting the "point of view" of health education. Authorities in this field now view the health program as an enrichment program, one that should not be considered in the light

of a separate course or held to any one class period or be delegated to a special "health teacher."

Rugen says, "*Health is not a subject;* it is a condition of organism, a quality of living." (17) and its teaching is as broad as school health education itself. Health education has come to mean the sum of all the experiences in daily living which best develop the well-being of the individual in school, home, and community. Its horizon includes the physical, the emotional, and the social, and it recognizes the interdependence of all of these. Health education is cognizant of the health aspects in all educational experiences and is concerned that children learn to solve all problems of living, giving due consideration to health values.

Health education today has the objectives of the development of healthy, vigorous, well-adjusted people who practice wholesome living voluntarily and who understand the "how and why" of it.

How are teachers going about the pursuit of this newer philosophy? Here are some examples.

Children in many schools, working under their teachers' guidance, are studying their school environment, deciding what phases help them to live comfortably, and why. Children are likewise finding the things in their environment that hinder comfortable, healthful living, deciding why these conditions are undesirable, and they are trying to work out ways and means of improvement. The children themselves are active in planning and making this study and, recognizing their needs, they become interested in doing something about these needs. Problem solving experiences thus are being worked out by the children under the guidance of the teacher Such a problem solving experience may take the form of a study of the lighting conditions of the school room, or it may have to do with heating arrangements, sanitary facilities, playground safety, etc. It is interesting to see a group of children take a light meter, for instance, and having learned its use, really find out about their own school room lighting conditions. They may try the curtains first this way and then that way to get the best light on their desks They may find that a complete re-arrangement of desks is necessary for adequate light for all, but whatever the situation, they study and work on point after point until they have actually made the school room a better place to live in as regards lighting and the use of the eyes.

Children are working together in informal discussion groups, conducting their own meetings, presenting their special reports, weighing and evaluating, and deciding what they think is possible to accomplish, making their plans and carrying on their activities. It is illuminating to see them use a health reference library, searching in books, looking through pamphlets, newspaper clippings, or reports on radio talks, or even taking a trip into the community to find the answer to some question that has been raised on their problem. These children are interested because the problem is theirs, it has become personal.

Under the guidance of their teachers, children are also trying to evaluate their own physical health needs. They are taking part in the weighing and measuring and vision and hearing tests. They are studying their posture, checking their disease history and immunity records, even looking

at their own teeth. These have become classroom experiences and activities and they are finding out a lot about themselves. The school doctor and nurse will help them further.

Community living is studied, needs are found in their own situations and problems are developed around these community needs. Children become more interested in improving that community.

Recently a bulletin called "The Problem Solving Approach in Health Teaching" has been printed and distributed to many of Michigan's schools by the Joint Committee on Health Education in Schools. This bulletin has gone into schools with the approval of the State Department of Public Instruction. It is a plan of work that is being encouraged among teachers throughout the state.

The bulletin's plan of work concentrates health education on giving children valuable experiences in studying conditions and developing better ways of living. It encourages spreading the problems beyond the school out into the community and by this means influencing the twenty-four hours of the child's day.

This is the type of health education that is being encouraged in our schools. From what has been said, it must not be inferred that all schools, either in this or other states, are following this plan for it must be admitted that many are still pursuing the old pattern of textbook subject matter treatment. We hope your schools are interested in adopting this more effective type or that you can encourage them to become interested.

A few moments ago we spoke of the use of banners, buttons, stars and other forms of motivation to secure dental corrections, and we made reference to the fact that such use belonged to the older philosophy of health education.

With the newer philosophy, these artificial devices really have no place because through adequate teaching and the use of the problem solving experience method of health education, the child has come to believe in and wants the care for its own sake. Such techniques have no place in the picture of health education where good teaching is involved.

Our aim—yours and mine, should be to do away with the use of any form of artificial stimulus. Probably it would be unwise to withdraw suddenly and entirely their use where already it is deeply established. Where such devices are used, we should minimize their importance and gradually encourage and guide the group to evaluate procedures to the end that the group itself will decide against the use of such motivations.

Where there is no history of the use of awards, we should avoid starting them. Here we can begin on the higher level to stimulate a good dental program through sound interested teaching in which the dental program is an integral part of the school health education program. Our objective is to work through good teaching which does not need awards of any type.

This, then, is the newer philosophy of health education, of which dental education of children is an integral, vital part.

HOW CAN THE DENTAL HYGIENIST FUNCTION IN THE NEWER PHILOSOPHY OF HEALTH EDUCATION?

"But how and where," you rightfully ask, "do I, as a dental hygienist, fit into this newer concept of health education?" "What opportunities exist for me to contribute to the dental health education of children and how can I make them effective?"

The opportunities that exist for your participation in the dental health education of children are legion—the need is there. The very fact that approximately 90% of school children present mouths with varying degrees of dental caries and malformations, irrespective of the parents' economic status, attests to the need of education. Your effectiveness in reducing this total will necessarily depend upon several factors among which are the following:

1. Your educational background.
2. Your own appreciation and understanding of health.
3. Your ingenuity, imagination, and organization ability.
4. Your understanding of the needs of children; how they grow and develop, how they learn.
5. Your ability to plan cooperatively with other health agencies and school authorities.
6. Your ability to interpret dental needs to children, teachers, and parents.
7. Your understanding and appreciation of the newer philosophy of health education.
8. Your place in the dental world, whether working in private practice or a school dental program.

These and many more are conditions which will affect your degree of effectiveness and participation in the ever broadening field of dental health education.

We shall not attempt their complete discussion but will enumerate some of the things you can do, whether you be engaged in private practice or employed in a school dental program.

The Dental Hygienist in Private Practice

1. You can establish friendly relationships with the child on his first visit to the office. This visit might well be likened to an exploratory trip in which the main attempt will be made to acquaint the child with the office equipment and its arrangement, and through such exploration and explanation, the natural fear of the child for the unknown will be alleviated. It should be remembered that this first visit of the child is a learning experience, just as are all his other experiences.

2. You can see that a supply of easily understood visual educational material, consisting of charts, models, pictures, etc., is available for discussion with the child. Encourage his questions. In so doing, you will be tying up the office visit experience with the classroom experience.

3. You can know the dental health books, pamphlets, and other printed materials that are pertinent to child reading. Do they present facts? What are the sources of such material? In a recent article printed in the February, 1937 issue of the Michigan School Health Association Journal and the March, 1937, issue of the Journal of School Health, American School Health Association, Easlick points out that many school children are compelled to get their dental knowledge from the often unscientific and unreliable statements contained in advertising matter, (18)

4. You can talk to the child while he is in your chair; talk to him in terms of what he is doing, of his daily care of the mouth and why; of his diet and its sugar and carbohydrate reduction and why; of the need of frequent and regular "check-up" and why.

5. You can try to guide the child to find things out for himself rather than be wholly concerned with *what* to tell him.

6. You can, through the use of hand and mouth mirrors and suitable models and charts, get the child to evaluate his own mouth condition.

7. You can get the child to report to you or the dentist on the progress he is making in the care of his mouth. You can get the child interested in his mouth, intelligent about it, and responsible for it. This is the very basis of our dental educational program.

8. You can devise and use a report card that will convey to the child's teacher the condition of his mouth at stated intervals. This is for inclusion on the child's Cumulative Health Record that should be in the hands of every school teacher.

9. You can be prepared to give short, illustrated classroom dental health talks which should encourage teacher and pupil discussions with you. Such talks must be informative, interesting, factual, and related to childhood dental experiences.

10. You can read the professional books and magazines. You can read the books and articles on the learning processes of children. You can attend professional meetings.

These are but a few of the things the dental hygienist, working in private practice, can do to coordinate her educational efforts with those of teachers and health workers and to make her efforts effective in improving the standards of child dental health.

But what of the dental hygienist working at a public health or school dental program? What can she do?

THE DENTAL HYGIENIST IN A PUBLIC HEALTH OR SCHOOL DENTAL PROGRAM

The dental hygienist working in a public health or school dental program is in a fortunate position indeed. Being in closer contact with an organized educational program, she can watch its development and observe its successes and failures. She can more closely watch the development of her own dental health educational activities and weigh and evaluate their results.

She can and should do most of the things that have been outlined for her professional sister engaged in private practice. In addition, there are

specific ways and means she can use to further dental health education along the lines of the newer philosophy of health education. For the following outline of suggested procedure, I am indebted to Reba F. Harris's article, "New Ways for Old in Rural School Health," printed in the September, 1937, issue of "Public Health Nursing." (19)

1. You can meet with the City or County Superintendent of Schools, Health Officer, and local dentists before the opening of the school term to develop a plan of meeting the dental health needs of children and teachers.
2. You can encourage the City or County Superintendent of Schools to present the plan to his teachers at their first meeting.
3. You can arrange for small group conferences with teachers to assist them in making an analysis of the dental health needs of their children. In such conferences you can suggest and encourage the development of dental problem solving experience plans in the classroom.
4. You can guide the teacher to encourage children to evaluate their own mouth conditions and to study ways and means of effecting beneficial changes.
5. You can see that each child's dental status is recorded on his Cumulative Health Record and check his dental progress with the teacher two or more times per year to note progress. You can assist children in getting dental service.
6. You can guide the teacher and pupils of each school in the development of a dental library of reference material, this material to be checked carefully for authenticity by yourself and to be filed and indexed by the children. You can see that this library is kept up to date by advising the teacher and children of sources of supply.
7. You can get the teacher and children mentally ready for the dental examination (whether you or a dentist make the examination) by assisting them in a study of its importance before the time of the examination. Many children are needlessly frightened by the sudden and unannounced visit of an examining dentist to the classroom.
8. You can, previous to the dental examination date, check the dental health record of children with the teacher to see which parents are to receive special encouragement to attend the examination. Together with the teacher, you will of course see that all parents are invited to the examination.
9. You can study the examination results with the teacher, giving particular attention to the records of children whose parents were not present at the examination and to the records of "underprivileged" children. Together with the teacher, you can make plans for visiting these parents and to study community resources for correction of dental defects.
10. You can guide the teacher to become conscious of the dental health needs of her pupils and to encourage continuous study to

promote a better understanding of the learning and growth processes of children. The precise methodology of such study can be left to the teacher.

11. You can work out your relationship with other health workers in the schools, cooperate with them to the end that children will not only enjoy dental but general health as well.
12. You can belong to and subscribe to your own professional organizations and magazines. You can have access to and use a dental library. You can read references and attend conferences on general education and health education.

This, in substance, is the newer philosophy of dental health education and suggested are ways of effectively functioning in it. What you do with it is up to you.

One thing should be remembered. No dental hygienist was ever successful in dental health education who stuck herself away in a corner and whose only interest and activity was "cleaning teeth." Your world is larger than that—something more is needed—energy, enthusiasm, knowledge, and the will to succeed. The field is before you, your progress is directly measurable by your own efforts.

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DR. CHARLES W. FREEMAN

"Dr. Charles W. Freeman, a member of the faculty of Northwestern University since 1912, has been appointed dean of the University's dental school. Dr. Freeman received his dental education at Northwestern University. He has devoted much time to research in the fields of oral surgery and local anasthesia. In recent years he has been assistant dean and professor of oral surgery at the school. He served overseas with the dental corps during the war. As dean of the dental school Dr. Freeman succeeds the late Dr. Arthur Davenport Black, who was the son of Dr. Greene Vardiman Black, the school's first dean, known as the Father of modern dentistry. Dr. Freeman has been an honorary member of The Illinois State Oral Hygienists' Association for several years, and is one of our staunchest supporters. We wish to offer our most sincere congratulations, cooperation and success in his new appointment as dean."

Helen M. Baukin

Miss Helen M. Baukin, President-elect of the American Dental Hygienists' Association, was born in Beloit, Wisconsin, and received her early education in the schools of that city She attended the State Teachers' College at Whitewater, Wisconsin, and after graduation taught school in the towns of Newark and Fort Atkinson. Because of her association with G. E. Cleophas, D.D.S., in Beloit, Wisconsin, Miss Baukin became very much interested in the profession of dental hygiene. This interest led her East to the Eastman School of Dental Hygiene in Rochester, New York.

She graduated in dental hygiene in 1920 from the Eastman School of Dental Hygiene and soon after her graduation she went to Honolulu, Hawaii to be associated with the Honolulu Dental Infirmary, an institution which was founded and supported by Mrs. Helen Strong Carter, to meet the very pressing need for better care of children's teeth in Honolulu.

Miss Baukin was called upon to organize the Dental Hygiene Division in the Department of Public Instruction in 1922 and at that time was made Director of this Territorial-wide school dental service. Through her excellent leadership and guidance, the community has been made aware of the importance of dental hygiene in public health and the staff of hygienists which started out with 9 in 1922 has now grown to 25. Dental hygiene service is now being carried to every one of the 165 public elementary schools in the Territory.

Miss Baukin has established a splendid relationship between the school dental hygiene service and the practicing dentists of the Territory and one of the outstanding pieces of work which has been accomplished is the unusually large number of children who have been educated to go to their own family dentists for corrections.

Miss Baukin has also been largely responsible for raising the training course for dental hygienists to a four-year basis in Hawaii. Last June, the first dental hygienists ever trained anywhere in the world on this basis were graduated from the Teacher Training College, University of Hawaii.

Miss Baukin is a member of the Hawaii Education Association, the National Education Association, the American Public Health Association,

the Hawaii Dental Hygienists' Association and the American Dental Hygienists' Association. She has served as chairman of the Education Committee, member of the Board of Trustees and also as First Vice-President in the American Dental Hygienists' Association.

On July 16, 1937, Miss Baukin left Honolulu for Japan and was one of the main speakers in the Health Section in the Convention of the World Federation of Education Associations held in Tokyo. She continued on around the world and visited many dental clinics enroute. Miss Baukin had the good fortune to attend the dedication services of the opening of the Eastman Dental Clinic in Paris in October, 1937.

Miss Baukin is at present with her family in Beloit, Wisconsin, but will return to Hawaii and to her work in September, 1938.

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The following informative articles appeared in the Council's section of THE JOURNAL for November, 1937. In this instance only they are being abstracted by title. In the future, a more detailed abstract will be presented.

"Relative Abrasive Properties of the More Commonly Used Dentifrice Abrasives" by H. N. Wright, Ph.D., and E. I. Fenske, D.D.S., pages 1889-1895.

"Zinc Oxide Impression Pastes and Surgical Packing" pages 1895-1897.

Abstracts from The Journal of The American Dental Association and Dental Cosmos.

PROGRAM PLANS FOR THE FIFTEENTH ANNUAL CONVENTION

The Fifteenth Annual Meeting of the American Dental Hygienists' Association will be held October 24-28, with the colorful city of St. Louis as its headquarters.

St. Louis abounds in a wealth of historical as well as cultural atmosphere, made all the more inviting by its picturesque parks.

Enroute to St. Louis no matter what one's starting point may be, we travel through miles of scenic territory. This may prove a happy suggestion for your vacation plans this year. October with its mellow days ahead proves one ideal time, as it is without a doubt the most colorful of all months.

Though still early in the year, plans are being made to make this one of our most outstanding and enjoyable conventions.

In planning the program the committee has made a special effort to afford time to the members of the A.D.H.A. to attend both our meeting and the sessions of the A.D.A.

We are happy at this time to offer a brief resume of our program plans so far:

Dr. S. Willard Camalier, President of the A.D.A., I trust, will welcome us to the meeting. This I know will be a pleasure as Dr. Camalier is one of our most beloved friends.

Dr. J. Albert Jacobsmeyer, President of the St. Louis Dental Society, will also honor us, he is both a noted personage and a fascinating speaker.

Dr. George E. Morgan, Head of the Pedodontia Department of Marquett University, will present a talk on "Pedodontia Problems of Particular Interest to the Dental Hygienist", illustrated with lantern slides. We are especially happy to have Dr. Morgan with us for in his practice exclusively devoted to dentistry for children interesting experiences occur which we would find educational.

Dr. Scott R. DeKins, secretary of the St. Louis Chamber of Commerce, has kindly accepted our invitation to present St. Louis to us as he knows it and we will hope to see it.

Wednesday, October 26th, has been entirely set aside to the Mouth Hygiene Sections, of the American Dental Association Program. We have felt in the past years an imperative need for time alloted on our program to permit our members to attend these instructive sessions. We feel that inovating this step will prove beneficial to all of us, and the privilege of attending these meetings will truly be appreciated.

The Entertainment Committee has planned an informal supper Monday evening, October 24th, a new occasion for all of us. This will take the place of the formal tea, but will still create an opportunity to see the

friends we anticipate seeing at the convention. Monday evening the A.D.A. is planning a party in the auditorium.

Our Annual Formal Banquet, a brilliant affair we all love, will be held Tuesday evening, with our gracious President as toastmistress.

The Mouth Hygiene Luncheon on Wednesday, October 26th, will again hold our interest, with Dr. LeRoy M. S. Miner, Dean of Harvard Dental School discussing the "Opportunities of Dental Service for Promoting Public Health". Wednesday evening the President's Ball of A.D.A. will be held at the Jefferson Hotel.

The Clinic Committee has made special efforts to procure the best clinicians for the clinics on Thursday, October 27th. It is the desire of this committee to stimulate interest, both to absorb new ideas and to rekindle enthusiasm and inspiration.

As it is still early in the year the various committees realize though making strenuous efforts we can not give a more detailed account of all our plans A full program will appear in the next issue of the Journal.

May we leave you with the thought of a pleasant occasion to renew friendship so dear, of seeing old friends unfortunately separated during the year. May this prove a delightful "get-together" when we ask about all those little problems that bother us each day, that we take away with us a beautiful memory of a fine convention.

Respectfully,

MATHILDE P. KRAUSER,
Chairman, Program Committee.

CONVENTION CLINICS

The task of presenting clinics in a state where local workers are not available has been greatly minimized by the willing co-operation of many organizations in other parts of the country.

We will have the interesting Florida group, Pearl Buffum, Ijourie Stocks, Catharine Mooney and Celia Perry, Chairman, who will put on a clinic and exhibit, displaying subjects that are studied in various schools, and also giving a practical demonstration.

From Massachusetts will come Edna Halibuton, Ann Wiltshire and Lillian Landry to show us "Sterile Technique".

Eleanor Dodd, District of Columbia will present her own table clinic used in the Washington, D. C. schools, which promises to be both instructive and entertaining.

From Wisconsin, we are anticipating the co-operation of Miss Mary Mikalonis.

AMERICAN DENTAL ASSOCIATION PLANS S. F. FAIR EXHIBIT

The extensive educational dental show in the Hall of Science at the 1939 Golden Gate International Exposition on San Francisco Bay under the direction and sponsorship of the American Dental Association, will attempt to impress dramatically upon the minds of millions of Fair visitors the importance of correct care of the teeth.

Realizing that the education of the public in health requirements is a serious responsibility, the dental association is making elaborate plans for the telling of its side of dental health. The general story of the teeth and how they affect health, and the history of dentistry will be the two main subjects of the exhibits.

One of the unusual displays will show, principally through the use of models of heads and jaws, the development of the teeth in the evolution of man. Another will portray the Eskimo, the South Sea Islander, the African native and the American Indian before and after his introduction to the white man's diet, illustrating the surprising effect this change of diet has had upon their teeth.

One of the displays revealing the history of dentistry will depict the progress which has been made in the profession during the past 100 years. A section of this display will contrast the Baltimore College of Dental Surgery as it looked in 1840 with the modern dental school of 1939. Through the use of transparencies, the discovery of nitrous oxide by Wells in 1844, the discovery of ether by Morton in 1846, and the invention of vulcanite rubber by Goodyear in 1850 will be portrayed. The hand drill and foot engine of these early days will also be shown in comparison with modern dental equipment.

The evolution of the artificial tooth and the story of the use of various filling materials will likewise be covered. In contrast with early dental practice modern plastic surgery and orthodontia will be illustrated. A magic dental office, which by means of mirrors and concealed lighting changes the scene from an 1839 dental office to an office of 1939 as the spectator looks on, will effectively denote the progress the profession has made during the past hundred years.

On the preventive and corrective side, a series of displays is planned to emphasize how early discovery and treatment of defects prevents serious decay. Murals and transparencies will be used to suggest how regular

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dental care improves the appearance and effects success, enables the mastication of food, improves health, prevents disease and reduces the expense of medical and dental treatment. Another transparency panel will show how the modern dentist eliminates pain in all dental operations.

Other transparencies will show the prevention of decay, prenatal care, infant and preschool care, the effect of calcium and phosphorus foods and the various vitamins on the teeth, and mouth hygiene. Large animated displays with flash translights will show teeth changing from good to bad to worse The "Talking Tooth" a huge model of a molar which deteriorates in full view of the visitor will tell its own tragic story. Still other displays will show the eruption of baby teeth, cancer of the mouth, syphilitic lesions of the mouth and other vital subjects.

Under the direction of Dr. Milton Silverman, the Hall of Science, one of the huge exhibit palaces leading off the central court, promises to be an outstanding attraction at the $50,000,000 Pageant of the Pacific.

The official headquarters for the Dental Hygienist convening in St. Louis, Mo., Oct. 24th, 1938 will be the Hotel Claridge.

To secure reservations in this hotel it will be necessary to make application as soon as possible. Please consult the rate list and indicate first, second and third choice. The hotel will then advise you of the reservation they have made for you.

Please remember that a reservation constitutes a contract with the hotel to provide you with the desired accommodation. If for any reason, you find it impossible to carry out your part of the contract, namely, to occupy the room at the time specified, please write or wire the hotel immediately. The room thus released will then be available for other members or guests.

NOTICE

We wish to express our appreciation to those members of the State Board of Dental Examiners who sent in notices of State Board Examinations but regret that some were received too late for publication in the April issue.

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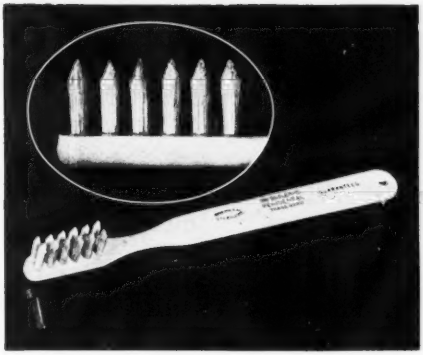

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